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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,468	12/26/2000	Naoki Tsuji	49657-862	1840

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EXAMINER

RAO, SHRINIVAS H

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 02/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/745,468

Applicant(s)

TSUJI, NAOKI

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 5-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) 1-10 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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***Response to Amendment***

Applicants' amendment filed November 19, 2001 has been entered on November 27, 2001.

Therefore claims 1-4 as originally filed are currently pending in the application.

***Election/Restrictions***

This application contains claims 5-10 drawn to an invention nonelected with traverse in Paper No. 6. A complete reply to the final rejection must include cancellation of non elected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Applicants' request for rejoinder is not found persuasive because applicants; failure to provide adequate reasons to support their rejoinder request.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (U.S. Patent No. 5,946,230, herein after Shimizu) for reasons set out in the previous office action ( mailed on 08/29/2001 paper No.5) and those set out below .

With respect to claim 1, Applicants' contend that, " the Examiner has admitted that Shimizu does not disclose the use of a positioning mark".

The Examiner in the last rejection page 3 lines 3-6 states, "Shimizu does not specifically state the dummy pattern cell (DPC) as being the positioning mark of the dummy region, however it is inherent from the way the DPC is used for e.g. col. 12 lines

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21-25 that the DPC is used as a positioning mark to form different pattern cells in the different regions". ( emphasis supplied).

It is not understood how the instant applicants can state from the above that the " the Examiner has admitted that Shimizu does not disclose the use of a positioning mark".

The above quoted paragraph in the Examiner's action clearly demonstrates that the applicants of the Shimizu reference are identifying an element in their specification as DPC whereas the instant applicants' have identified a similar element as a positioning mark. This is keeping with the allowed practice that each applicant can be their own lexicographer.

Therefore the instant applicants' conclusion " the Examiner has admitted that Shimizu does not disclose the use of a positioning mark" , is baseless and not persuasive.

Next the instant applicant' argue that, "without providing any factual basis, the Examiner concluded that the disclosed dummy pattern cell (DPC) is an inherent positioning mark."

In the previous office the Examiner on page 3 thereof in lines 5-6 states, "it is inherent from the way the DPC is used for e.g. col. 12 lines 21-25 that the DPC is used as a positioning mark to form different pattern cells in the different regions". (emphasis supplied).

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It is again not understood in view of the Examiner's specific reference to col. 12 lines 21-25 how applicants' can conclude that the Examiner does not base his conclusion that the DPC is equivalent to the positioning mark without factual basis.

If referring to the specific page and line number of the specification and proving/ explaining that the prior art element and the recited element are similar in structure and function are not factual evidence the it is not understood what factual basis will satisfy the applicants?

Applicants' next argue that , " the Examiner has made no attempt to discharge the initial burden by identifying wherein Shimazu et al. disclose or even remotely suggest a positioning mark formed between a plurality of dummy isolation regions as claimed.

The Examiner in the previous office action page 2 last line and page lines 1-2 states, "...; a positioning mark ( DPC) formed between the plurality of dummy trench isolation regions and is used to position the mask film ( Shimizu fig. 13 A and B and col. 13 line 3-col. 14 lines 14)".

It is noted that in fig. 13 B as shown below the dummy pattern cell (DPC) is formed between isolation members 2.

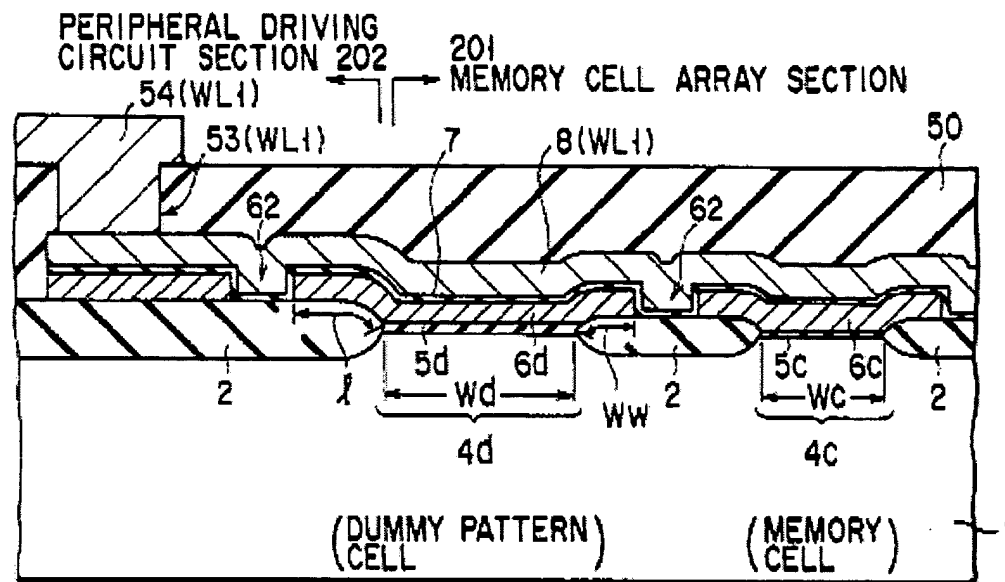
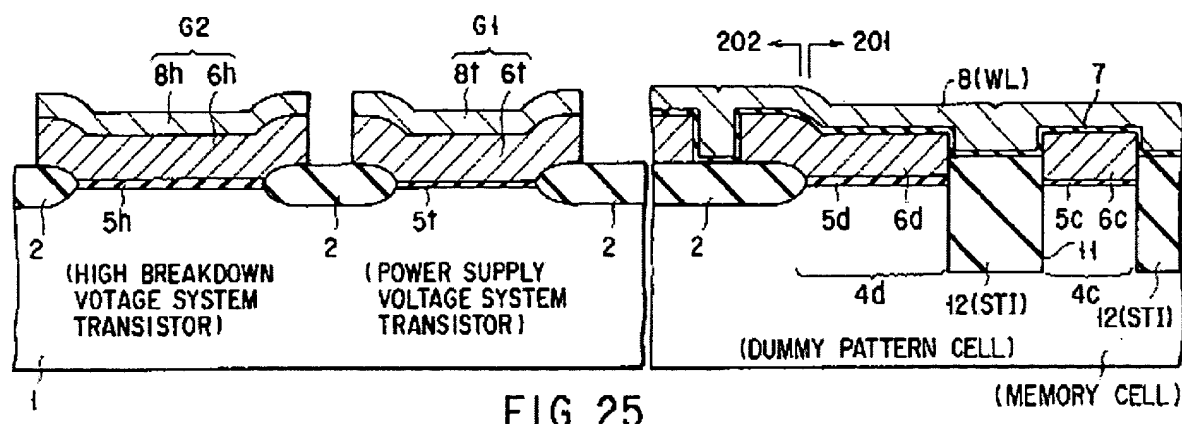


FIG. 13B

It is further noted that at col. 22 lines 45 describing a tenth embodiment states,

In the tenth embodiment, the LOCOS element isolation region **2** is used for element isolation in the circuit section **202** and the self-aligned trench element isolation region **12(ST1)** is used for element isolation in the array section **201**, but it is possible to use the LOCOS element isolation region or the trench element isolation region for element isolation in both of the circuit section **202** and array section **201**. Further, it is possible to use the LOCOS element isolation region for element isolation in the circuit section **202** and use the trench type element isolation region for element isolation in the array section **201**.



Further as seen from fig. 25 in an alternative embodiment dummy STI can be used instead of isolation region 2.

Therefore the DPC has been formed between the two dummy STI isolation areas.

Additionally, the DPC used to position the mask film as can be seen at col. 12 lines 59-65, col. 14 lines 55-68 etc..

Therefore all limitations of the claim are pointed out with particularity in the applied prior art.

Applicants' argument that Shimizu does not disclose the positioning mark structure, citing fig. 16 C therein, is also not persuasive because the description of fig. 16 C ( reproduced below) says :

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After this, as shown in FIG. 16C, a portion in which selection transistors ST are to be formed and a portion in which a dummy pattern DP is to be formed are covered in the array section 201, the first gate insulating films 5d are selectively removed by use of a mask 61 having windows in portions in which memory cells are to be formed so as to selectively expose the main surface of the substrate 1. Next, tunnel insulating films 5c for example, thermal oxidation films thinner than the first gate insulating films 5d are formed on the exposed main surface portions of the substrate 1.

Therefore it is clear that the DP pattern and the mask 61 ( along with the windows) are used to precisely form oxide layer ( tunnel insulating films 5c) on the substrate. Thus mask 61 is used as positioning mask to form the oxide layer ( tunnel insulating films 5c) .

Therefore all of applicants' allegations are not found to be persuasive and therefore the previous rejection is maintained and made final.

### ***Response to Arguments***

Applicant's arguments filed 11/19/ 2001 have been fully considered but they are not persuasive. for reasons fully set forth above.

Applicants' arguments necessitated the above response.

A separate basis for making this action also exists as the same references as previously applied have been used in this action also.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).




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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is 703-306-5945. The examiner can normally be reached on M-F, 8.00 to 5.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703- 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703- 308-0956.

  
Steven H. Rao  
Patent Examiner  
February 8, 2002

  
OLIK CHAUDHURI  
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